

Care and Maintenance of Mowing Equipment

Proper Preventative Maintenance Program Adds Life to Major Equipment

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THE proper maintenance of mowing equipment is of paramount importance to golf club superintendents. The establishment of a planned preventative maintenance program will add years of cutting life to equipment that represents a major capital investment.

The purchase of a new tractor with a five-gang mower is the equivalent of buying a new \$3,000 automobile. When you take possession of a new car, you drive it from the dealer's showroom with great care. When you get it into your garage, one of the first things you do is read over the manufacturer's instruction and operating manual. For the first 500 miles you drive over good roads at moderate speeds to break it in properly. At the end of this period, you go back to the dealer for a check-up to make sure your car is functioning properly and all engine and body parts are tight.

Break-In Period Important

If every superintendent could impress upon his operators the importance of a break-in period for all mowing equipment, they would reap tremendous dividends in low-maintenance and high operating performance. Just like a car, each new tractor and gang mower unit should have a break-in period. It is not necessary to baby the unit for three or four weeks as you would a car, but care should be taken not to overload the tractor or take it over rough terrain for at least the first 10 to 15 hours of operation.

When you take delivery of your tractor, and if it is not necessary to put it to work immediately, it is a wise procedure to run the engine at a slightly over idling speed for three or four hours. While most tractor engines have had a factory run-in, it is good practice to give the unit an additional run-in period.

Gang mowers should be checked also to see if all points are properly lubricated before a wheel is turned because, the life of fairway mowers actually depends on

how the cutting edges are adjusted for the first eight hours of operation.

When the mowers leave the factory, the flyknife reel and bedknife steel are ground as close as possible to conform to natural surfaces. For every half hour during the first eight hours of operation, extra care should be made to see that proper adjustment is maintained. This will eliminate uneven wear and prevent distorted surfaces and uneven cutting edges.

Give your mowers at least an eight hour break-in period at slow speeds over relatively easy, level terrain. After this "shake-down" operation, they should be checked thoroughly and any nuts or bolts that have loosened should be tightened.

Small power mowers also require a break-in period. The motor should be run for about two or three hours before actually operating the mower. The unit should be checked for proper adjustment every half hour for the first eight hours of operation—just as a gang mower should be checked. After this eight hour shake-down period, check the machine and tighten any nuts or bolts that may have become loosened.

Proper Lubricating Practices

Use only clean oil and grease of the grade recommended by the equipment manufacturer to lubricate your units. Too often, oil or grease cans are left open in the maintenance shed. These opened cans collect dust, dirt and even metal chips which can be forced into precision bearings and cause premature failure. Your automobile service station does not use contaminated grease or oil when they lubricate your car, so why use it to lubricate your tractors, gang mowers or power mowers.

Set aside a period of time each week for a complete, overall check and lubrication of all equipment. Take a little longer than your daily check-up and you will insure long-life and low-maintenance costs for your equipment.

Keep a record sheet for each piece of

equipment you operate. This record can be hung up on the wall where the equipment is stored. Fill in information such as dates machines were lubricated, the battery checked, the mowers sharpened and all other maintenance measures taken, together with such other data as may be required. Check instruction manuals for frequency of lubrication.

Use of Instruction Manuals

Every manufacturer of mowing equipment goes to great expense to prepare and furnish instruction manuals and parts lists for each piece of their equipment. Never assume that you know all about mowing equipment and that you can "File and forget" this manual. Your maintenance man and operator, as well, should read through the manual carefully and familiarize himself with the new equipment. It will pay off in savings later on. This manual is an important part of your equipment, almost as important as a wheel, and should be placed in an active file for ready reference. If your manual has become lost, write the manufacturer of the equipment for an additional copy for your records. Give model and serial number of equipment. Make sure you get the correct manual for your machine.

Maintenance of Gasoline Engines

Tractor engines are of the water-cooled type and will not require as much attention as the air-cooled engines used on small power mowers. The level of water in radiator, the oil in sump, and the carburetor air cleaner, should be checked regularly each day the unit is used.

Power mower engines are air-cooled and have air ducts and screens that are designed to keep the engine running at the correct temperature. Grass clippings and dirt should be cleaned regularly from the screens and ducts to assure the engine "breathing" properly and running at right temperature.

Another occasion for excessive maintenance of engines is created by the use of dirty gasoline. When contaminated gasoline is used in the tank of tractors or power mowers, dirt is carried to the carburetor where it clogs jets and leaves the engine starved for gas. This loss of engine power, extra maintenance costs and downtime can be averted only by using clean gasoline.

Unwatched grass clippings can also create extra maintenance. Unless they are cleaned off the top of the gasoline tank and around the fill cap, clippings may drop into the tank. Gas will break down the

grass and leave a lint-like structure that clogs gas lines and carburetor jets.

Informed Operator Does Better Work

Take time to instruct each man on the proper operation of all the equipment he uses, from a tractor and gang mower to the lowly hand mower. Cover the operation and type of work each unit is designed to do and the equipment will not be misused or abused. If each operator knows why he is doing a particular job he can and will do it better. He will be a happier and more efficient, effective worker in helping to keep the course in top condition.

A Word About Mowing Speeds

You probably have never seen anyone pushing a hand mower too fast. Most "walk-behind" power mowers are designed to give the best cut at this same normal walking speed. With riding-type machines, the speed is increased, but only slightly faster. Never operate power mowers at full throttle.

Tractor and gang mower speeds have been the subject of much discussion. Most fairway type mowers have been designed for speeds up to six miles per hour and will give the best cut within this speed range. On fairway mowers, the height of cut is adjusted from the roller which must follow the natural contour of the ground to give a proper cut as set and to give the golfer the lie he expects on the fairway. If the tractor speed is excessive, the roller bounces off the ground, and irregularities in ground level result. If spring-loaded rollers are used, this condition is obviously minimized and often eliminated. At speeds faster than six miles per hour, maintenance costs mount rapidly. If high speed is a "must," there are high-speed mowers available other than fairway types, which have been specifically designed for this operation. Using pneumatic tires that do not depend on a roller to control the depth of cut, they can be operated at any speed compatible with the contour of the ground and the comfort of the operator.

Proper Adjustment Adds Life

Proper adjustment of reel type mowers has a definite bearing on the life of the machine. Most operators have a tendency to maintain too tight an adjustment which causes premature wear on the flyknife reel and bedknife steel. This wear is very obvious and noticeable even from a casual observation. A too tight adjustment not only causes wear to flyknife and bedknife, but is transmitted through the bearings and gears right through to the drive wheels. The tight adjustment will also create ex-

cessive friction and overload the engines of power mowers.

To know just what the proper adjustment is, an understanding of the principle of cutting is helpful. Cutting itself, is similar to the shearing action of a pair of scissors. The cut is made by two sharp square surfaces moving together and across each other's edge.

If you take a new pair of scissors in proper adjustment, they will cut paper or cloth with little effort. If you tighten the blade adjustment, you can hardly operate them at all and this is what happens when a reel type mower is too tight. Conversely, when you make the blade adjustment too loose, the scissors will not cut but merely pinch. When the adjustment of a reel type mower is too loose, it only pinches the grass between the reel and bedknife and is dragged across the knives, actually rounding off and removing the sharp edge. When this happens, it is necessary either to "lap in" the two surfaces with an abrasive, or set the adjustment slightly tighter than normal to wear the surfaces back to original sharpness.

Just what is the proper adjustment for a reel type mower? In all truthfulness, there is no definite rule or measurement for this other than the fact that the two surfaces should be adjusted to zero clearance in order to offer just a slight contact between the flyknife reel and the bedknife steel. If this contact is maintained at all times, you will have a relatively self-sharpening effect. As the unit is operated during the season, the front edge of the bedknife steel is worn away, leaving a feather edge. This is formed by the reel as it revolves across the cutting surface. To eliminate this condition, the steel should be ground in a bedknife backing grinder or filed to a square sharp edge.

Grinding Mowers

Unless the proper tools are available, it is better to have the authorized dealer for your equipment do the job for you. He has the proper equipment and know-how to do the job properly. Bear in mind that the important surfaces which do the actual cutting can be quickly ruined and many years of life that is available in the mower destroyed if you subject them to improper grinding. If you have the proper grinding machines, write the manufacturer of your equipment for grinding specifications before attempting the job yourself.

Proper Winter Storage

The ideal time to do any major repair work that may be required is before the

tractors are stored away for the winter. When the mechanical work is completed, run the engine until the oil is warmed and then change oil. Remove the battery and store in a warm dry place. Drain water from the radiator. Remove the spark plugs from the engine and cover the top of each piston with about one ounce of lubricating oil, then replace spark plug. Drain out gasoline from the tank and carburetor and blow out gas lines. It is wise to check condenser, points, and spark plugs, replacing them if faulty or worn. Before placing tractor up on blocks, check tire pressure and make sure it is proper for each tire. Make sure that liquid filled tires contain a non-freezing solution.

Remember, the storage area for your tractor should be dry and away from fertilizer or plant food.

Before storing gang mowers, remove the frames. Remove the gear casing covers and inspect all gears and bearings, then replace all worn parts and reassemble. Oil all bearings and lubrication points. Sharpen flyknife reel and bedknife if required. When maintenance work is complete, thoroughly clean both mower and frame and repaint. Store units in a dry place to prevent excessive weathering.

Small power mowers should also be repaired (if required) before storage. After removing fuel line from gas tank, drain out all gasoline from tank and carburetor to prevent formation of gum, then replace line. An ounce of lubricating oil should be

Western Turf Meetings

Oct. 8—Northern California Turf Grass Conference—Univ. of Calif., Davis, Calif. Dr. Robert Deering, Dept. of Landscape Management, Davis, Calif.

Oct. 12-13—Southern California Turf Conference and Field Day—Riviera CC. Dr. V. T. Stoutemyer, Dept. of Floriculture and Ornamental Horticulture, Univ. of Calif. at Los Angeles.

Oct. 17—Southwest Turf Conference—Agricultural Experiment Station, Tucson, Ariz. Mr. Charles J. Treacy, supt., Phoenix CC, Ariz.

Oct. 19—Rocky Mountain Turf Conference and Equipment Show—Park Hill CC, Denver, Colo. Mr. Robert O. Shearer, pres., Park Hill CC.

placed on the top of the piston and the spark plug replaced. Ground out the spark plug wire, then pull up the engine against compression. The cutting unit should be inspected and resharpened if required. Make sure that all bearings and gears are lubricated, then clean complete mower and frames with a detergent and paint. Store the mower in a dry place away from fertilizer or plant food.

Review Equipment Needs

The time when you are repairing and storing your equipment for the winter is the time to do your planning for Spring. Review your requirements and, based on the condition of your present equipment and the job to be done, get prices on needed equipment to present to your club committee or Board of Directors. Your equipment dealers will be glad to arrange demonstrations of equipment for you at any time in order to help justify your requests for additions and replacements. Make sure, when planning for Spring, you request an adequate set of tools to keep your machines maintained for the coming season. And make sure, too, that all stored equipment is adequately covered by insurance.

National Golf Fund Issues Report

NATIONAL GOLF FUND, INC., has issued a treasurer's report covering receipts for National Golf Day in 1952 and 1953 and expenses to date.

Receipts for 1952 National Golf Day co-sponsored by Life magazine and the PGA were \$80,112 of which half was contributed to the USO. Of the remaining half \$20,000 was allotted to PGA relief, benevolent and educational funds, caddie funds, USGA Green Section turf fellowship, Junior Chamber of Commerce national junior championship, and AWVS Swing Clubs, leaving a balance of \$20,086.50.

This year's National Golf Day receipts were \$108,719.65, of which \$54,357 is approximately the half earmarked for USO. This leaves about \$74,116 of National Golf Fund, Inc. funds available for distribution to golf educational, welfare and charity activities that can qualify according to Internal Revenue dept. regulations.

National Golf Fund, Inc. welcomes inquiries from qualified organizations. Fred Riggan, Sr., pres., Mueller Brass Co., Port Huron, Mich., is president of the Fund. With him on the Fund's board are other widely known amateurs and PGA officials.

Toro Distributors Honor Scotty McLaren and Wife

In July M. R. (Scotty) McLaren, field expert for Toro Mfg. Corp., celebrated his



"Scotty" McLaren

70th birthday and his 35th year with the company. In gratitude for the able assistance received from Scotty, Toro's 75 distributors, through their advisory committee, presented Mr. and Mrs. McLaren with round trip tickets to Scotland with all the trimmings for a month's vacation. Presentation was made by E. J. Smith to the surprised and overjoyed McLaren team-mates during the opening dinner of the Toro distributors' convention.

Ken Goit, as toastmaster, recalled many of Scotty's exploits over the years. The McLarens left by air Sept. 15 and will spend most of their time in Glasgow and vicinity during which they'll celebrate their 43rd wedding anniversary.

Vardon Trophy Leaders

As of Sept. 15, Mangrum with average of 70.22 strokes for 64 rounds led in Vardon Trophy rating. Dutch Harrison with 70.45 av. for 94 rounds was second, followed in order of averages by: Sam Snead—70.79 for 52 rounds; Fred Haas, Jr.—71 for 77 rounds and Marty Furgol—71.07 for 104 rounds.

TIME OUT FOR TWO CHAMPIONS



Rene Dentan (R) presents a Rolex watch to Babe Zaharias as a trophy for the Babe's Tumor Fund drive. The ceremony took place at Tony Manero's Steak House, Riverside, Conn., as you might suspect from Tony on the left and the sign in the background. Between Babe and Tony is Ed. J. Meyer who, like Denton, is a Rolex official.